*Health Information Technology*

# An Assessment of Maryland Hospitals

*July 2012*


The MARYLAND
HEALTH CARE COMMISSION

# The Purpose of this Presentation

**To provide an overview on the adoption and use of health information technology in Maryland's 46 acute care hospitals and pose policy questions to the Commissions for discussion**

# About the Hospital HIT Survey

- **Background:**
  - **In 2008, the Maryland Health Care Commission (MHCC) began conducting the annual Hospital Health Information Technology Survey (survey) with the hospital CIOs from each of the 46 acute care hospitals in Maryland**
  - **The MHCC received a 100 percent response rate to the 2011 survey**
- **Purpose:**
  - **The MHCC designed the survey to collect data regarding health IT adoption rates in Maryland in an effort to assess the state's progress and compare adoption rates with those of hospitals nationwide**
  - **The survey findings also identified potential challenges to technology adoption and increasing adoption opportunities in acute care hospitals**

# What Technologies are Assessed?

The annual survey measured the adoption of the following key technologies:

1. **Electronic Health Records (EHR):** An EHR is an electronic version of a patient's medical record that can effectively reduce medical errors and lead to health care savings and better health outcomes. Financial benefits of EHRs are mostly attributed to efficiency gains.

2. **Electronic Prescribing (e-Prescribing):** E-Prescribing is the digital generation, transmission, and filling of a prescription. E-Prescribing offers many benefits, such as fewer medical errors due to illegible handwriting and a more convenient means for patients to obtain prescription drugs.

3. **Computerized Physician Order Entry (CPOE):** CPOE is a software application designed for providers to write patient orders electronically ; CPOE has the potential to greatly reduce errors and improve patient care by ensuring standardized, legible, and complete orders.

# What Technologies are Assessed? (continued)

4. **Electronic Medication Administration (eMAR):** EMAR is an application that maintains electronic records of ordered and administered medications to minimize the opportunities for human error or error due to lack of documentation; the goal of eMAR is to help clinicians reduce medication errors, thereby improving patient safety and overall medical care.

5. **Barcode Medication Administration (BCMA):** BCMA is software that uses barcodes to prevent human errors in the distribution of prescription medications at hospitals. BCMA can be used to verify that the correct patient is receiving the proper medication in the right dose and method at the right time when the medication is administered.

6. **Infection Surveillance Systems (ISS):** ISS is a real-time application that alerts health care providers to spikes in infection rates and the location of affected patients within a facility in real time and alerts hospital providers to certain infections and enables early intervention.

# What Technologies are Assessed? (continued)

7. **Health Information Exchange (HIE):** HIE is the electronic movement of health-related information among organizations. Efficient and dependable HIE will reduce redundant laboratory tests for patients who seek care in different settings, reduce duplication of radiology studies through digital transmission of reports, enable reliable connections to pharmacies to help generate better medication lists, and reduce adverse effects from drug interactions.

8. **Telemedicine:** Telemedicine is generally a means of delivering health care remotely through the use of communication technologies, such as video conferencing. This technology enables health care providers to conduct the diagnosis, consultation, treatment, education, and care management of patients from a different location.

# Why Assess Hospital HIT Adoption?

**Hospital HIT adoption rates are expected to increase over the next several years.**

- **While few comprehensive estimates exist of the savings from HIT, one study indicates that effective electronic health record (EHR) implementation could save more than $81 billion annually by improving health care efficiency and safety; another study indicates the cumulative potential net efficiency and savings from hospital EHR systems nationally over 15 years could be nearly $371 billion.[1, 2]**
- **Rates of EHR adoption and electronic prescribing in hospitals nationally and statewide are expected to increase over the next several years due to federal incentives.[3]**

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1. Health Affairs, Can Electronic Medical Record Systems Transform Health Care? Potential Health Benefits, Savings, and Costs, 24(5), September 2005.
2. Health Affairs, The Value of Electronic Health Records In Community Health Centers: Policy Implications, 26(1), January, 2007.
3. Surescripts, The National Progress Report on e-Prescribing and Interoperable Healthcare, 2010. Available at: http://www.surescripts.com/about-e-prescribing/progress-reports/national-progress-reports.aspx.

# Overview of Hospital HIT Adoption

| Comparison of Hospital Health IT Implementation by Maryland Hospitals 2008 through 2011 | | | | | |
|---|---|---|---|---|---|
| **Technology** | **2008** *(n=44)* *# of Hospitals* | **2009** *(n=47)* *# of Hospitals* | **2010** *(n=46)* *# of Hospitals* | **2011** *(n=46)* *# of Hospitals* | **2008 – 2011 Change** *(# change)* |
| Electronic Health Records | 34 | 38 | 41 | 41 | 7 |
| Electronic Prescribing | 4 | 13 | 9 | 17 | 13 |
| Computerized Physician Order Entry | 24 | 32 | 36 | 38 | 14 |
| Electronic Medication Administration Record | 24 | 37 | 37 | 40 | 16 |
| Barcode Medication Administration | 14 | 38 | 29 | 32 | 18 |
| Infection Surveillance Software | 18 | 19 | 17 | 16 | (-2) |
| **Health IT adoption rate*** *(%)* | **45** | **63** | **61** | **67** | **22** |
| HIE Connectivity | *N/A*** | *N/A* | 5 | *46* | *46* |
| Telemedicine | *N/A* | *N/A* | *N/A* | *26* | *N/A* |

**The hospital health IT adoption rate was calculated using the hospitals that responded yes to adopting each of the following six technologies: EHRs, e-prescribing, CPOE, eMAR, BCMA, and ISS.*

***N/A indicates that data for the identified technology was not assessed during the specified reporting period.*

# Hospital HIT Adoption by Characteristics

| Comparison of Hospital Health IT Implementation by Maryland Hospitals in 2011 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Hospital Category** | | **Total Hospitals** | **EHRs** | **eRx** | **CPOE** | **eMAR** | **BCMA** | **ISS** | **HIE Connectivity** | **Telemedicine** | **Health IT Adoption Rate*** *(%)* |
| **All Hospitals** | | 46 | 41 | 17 | 38 | 40 | 32 | 16 | 46 | 26 | **67** |
| **Size** | Academic | 2 | 2 | 1 | 2 | 2 | 1 | - | 2 | 1 | **67** |
| | Large | 16 | 16 | 6 | 13 | 16 | 12 | 7 | 16 | 10 | **73** |
| | Medium | 18 | 15 | 4 | 15 | 15 | 14 | 5 | 18 | 10 | **63** |
| | Small | 10 | 8 | 6 | 8 | 7 | 5 | 3 | 10 | 5 | **62** |
| **Geographic Location** | Urban | 12 | 11 | 6 | 10 | 11 | 7 | 4 | 12 | 6 | **68** |
| | Suburban | 17 | 13 | 3 | 12 | 13 | 10 | 5 | 17 | 10 | **55** |
| | Rural | 17 | 17 | 8 | 16 | 16 | 15 | 6 | 17 | 10 | **76** |
| **Affiliation** | In State | 26 | 24 | 10 | 21 | 24 | 18 | 10 | 26 | 12 | **69** |
| | Out of State | 3 | 2 | - | 1 | 2 | 1 | 1 | 3 | 2 | **39** |
| | Standalone | 17 | 15 | 7 | 16 | 14 | 13 | 4 | 17 | 12 | **68** |

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# Key Findings

- Overall, health IT adoption increased nearly 6 percent over the previous year and overall, health IT adoption trends have increased about 22 percent since the data collection began in 2008
- Hospital EHR adoption in Maryland is at roughly 89 percent, which is well above the national average; according to a survey administered by the American Hospital Association in 2011, the national EHR adoption rate in hospitals is about 35 percent
- Although national studies indicate that rural hospitals are the least likely group to adopt health IT in general, or even a basic EHR system, the rural hospitals in Maryland reported the highest EHR adoption rate of 100 percent
- All 46 acute care hospitals are sharing data with the statewide HIE
- 2011 was the first reporting period that asked hospitals to include data on the adoption of telemedicine; approximately 57 percent of Maryland hospitals are currently using telemedicine to provide health care services

# Remarks

- Health IT is often considered to be one of the most important means to improve the quality and efficiency in health care; the adoption of health IT is complex and realizing the benefits is usually a long process
- The health IT adoption incentives available through the Health Information Technology for Economic and Clinical Health Act provides funding to build the infrastructure needed for hospitals to achieve the primary goals of the Patient Protection and Affordable Care Act (ACA)
- The ACA will lead to compensating hospitals for higher quality and likely result in far more reasons for hospitals to invest in health IT than a focus on the traditional business metric of cost avoidance
- The impact of health IT adoption on health outcomes remains uncertain; broad adoption is thought to reduce medical errors and improve health outcomes; if the focus on care delivery remains patient centered, disputing the investment in health IT becomes almost impossible

# Questions

**For additional information, contact the Maryland Health Care Commission**

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